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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Hee Gap Park et al.
Appl. No.	:	10/676,543
Filed	:	October 1, 2003
For	:	Er-DOPED SUPERFLUORESCENT FIBER SOURCE WITH ENHANCED MEAN WAVELENGTH STABILITY
Examiner	:	Ernest Unelus
Group Art Unit	:	2828

DECLARATION OF MICHEL J.F. DIGONNET PURSUANT TO 37 C.F.R.§ 1.132

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I, Michel J.F. Digonnet, declare as follows:

1. I am one of the joint inventors of the claimed subject matter of the above-captioned patent application.

2. I have reviewed the above-captioned patent application, including the specification, the originally-filed claims, and the currently-pending claims. I have also reviewed the February 3, 2006 Office Action in the above-captioned patent application, including the rejection of Claims 28 and 30-33 under 35 U.S.C. § 102(b), as being anticipated by Hall *et al.*, "High-Stability Er^{3+}-Doped Superfluorescent Fiber Sources" ("Hall") and the rejection of Claim 29 under 35 U.S.C. § 103(a) as being unpatentable over Hall. I have also reviewed the Hall reference.

3. Hall discloses a superfluorescent source having a "short term (1-h) peak to peak stability of ~ 3 ppm, with a standard deviation of ≤0.9 ppm (RMS)." (Hall, p. 1458, second column) Hall further discloses that "a long-term scale factor stability approaching 0.5 ppm appears feasible," but that his measurements only show "an exceptional diode-pumped

broadband SFS λ stability to better than 0.12 Å (8 ppm) for over 20h." (Hall, p. 1459, first column, lines 12-15).

4. Persons skilled in the art understand the abbreviation "RMS" to stand for "root mean square," and that a standard deviation of a data set expressed as a root mean square refers to the square root of the mean squared deviations from the average of the data set (*e.g.*, $\sigma = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(x_i - \bar{x})^2}$).

5. Thus, Hall discloses that the short term (1-h) peak-to-peak stability of the wavelength is ~ 3 ppm, and the square root of the mean squared deviations of the wavelength from the baseline wavelength is ≤ 0.9 ppm.

6. Claim 28 of the present application recites "a superfluorescent fiber source (SFS) having a mean wavelength which is stable to within approximately ±0.5 part per million over a period of time of at least one hour." In this way, Claim 28 expresses the stability of the mean wavelength as the maximum deviation of the mean wavelength from its average value during a specified time period.

7. Persons skilled in the art understand that a statement that the stability of the mean wavelength is "within approximately ±0.5 part per million" over a specified time period means that the mean wavelength remains within the range between approximately $\lambda_{avg} \times (1 - (0.5 \times 10^{-6}))$ to approximately $\lambda_{avg} \times (1 + (0.5 \times 10^{-6}))$ over the specified time period, where λ_{avg} is the average of the mean wavelength over the specified time period. Thus, a mean wavelength stable to within approximately ±0.5 ppm over a period of at least one hour would have a 1-h peak-to-peak stability of approximately 1 ppm.

8. Accordingly, while Hall discloses a mean wavelength having a peak to peak stability of ~ 3 ppm with a standard deviation of ≤ 0.9 ppm (RMS) over the period of an hour, Hall does not disclose a mean wavelength "which is stable to within approximately ±0.5 part per million over a period of time of at least one hour," as recited by Claim 28.

9. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made upon information and belief are believed to be true; and further, that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001, Title 18 of the United

States Code, and that willful, false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: June 13, 2006 By: Michel JF Digonnet
Michel J.F. Digonnet

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